

Favorable consideration of this application is respectfully requested.

February 8, 2002

Date

Respectfully submitted,

A large, stylized handwritten signature in black ink, appearing to read "Richard J. Streit", is written over a horizontal line.

Attorney for Applicant

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CLAIMS:

14. A vehicle with at least one steerable wheelset adapted to run on a guideway having two primary running faces laterally offset about a guideway centerline, the wheelset comprising a pair of wheels, each wheel located on opposite sides of the wheelset adapted to engage with a respective one of the two primary running faces, the vehicle further comprising sensing means for sensing lateral displacement of the wheelset with respect to a longitudinally disposed reference path, the sensing means producing a signal for a control system operably connected to an actuating means to steer the wheels in response to the sensed lateral displacement, the axes of rotation of the wheels and the primary running faces are inclined downwardly toward the guideway centerline.

15. A vehicle as claimed in Claim 14, wherein each wheel exerts an engagement force with its respective primary running face, the engagement force on each wheel comprising a perpendicular component to its respective primary running face and a parallel component to its respective primary running face substantially perpendicular to the guideway centerline, wherein horizontal forces acting on the wheelset substantially transversed to the guideway centerline are substantially resisted by the sum of the horizontal vectors of the perpendicular components.

16. A vehicle as claimed in Claim 14, wherein each wheel exerts an engagement force with its respective primary running face at a contact zone, the engagement force on each wheel comprising a first component perpendicular to its respective primary running face and a second component parallel to its respective primary running face substantially transverse to the guideway centerline, wherein a first plane perpendicular to the axis of rotation of one of the wheels passes through the centroid of its respective contact zone, and a second plane perpendicular to the axis of rotation of the other wheel passes through the centroid of its respective contact zone, the first and second planes intersecting along an intersection line disposed above and between the wheels, wherein horizontal forces acting on the wheelset substantially transverse to the guideway centerline at or near the intersection line

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are substantially resisted by perpendicular components of the engagement forces acting at the primary running faces, such that substantially all of the parallel components of the engagement forces acting at the primary running faces are available to steer the wheelset.

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17. A vehicle as claimed in Claim 16, wherein the intersection line passes through the center of gravity of vehicle.

18. A vehicle as claimed in Claim 14, wherein the sensing means comprises at least one sensor located either ahead or behind the wheelset, or laterally offset with the wheelset.

19. A vehicle as claimed in Claim 15, wherein the sensing means comprises at least one sensor located either ahead or behind the wheelset, or laterally offset with the wheelset.

20. A vehicle as claimed in Claim 16, wherein the sensing means comprises at least one sensor located either ahead or behind the wheelset, or laterally offset with the wheelset.

21. A vehicle as claimed in Claim 14, wherein the sensing means comprises at least two sensors, one of which is located ahead of the wheelset and the other is located behind the wheelset.

22. A vehicle as claimed in Claim 15, wherein the sensing means comprises at least two sensors, one of which is located ahead of the wheelset and the other is located behind the wheelset.

23. A vehicle as claimed in Claim 16, wherein the sensing means comprises at least two sensors, one of which is located ahead of the wheelset and the other is located behind the wheelset.

24. A vehicle as claimed in Claim 14, wherein the longitudinally disposed reference path is substantially contiguous with the guideway centerline.

25. A vehicle as claimed in Claim 15, wherein the longitudinally disposed reference path is substantially contiguous with the guideway centerline.

26. A vehicle as claimed in Claim 16, wherein the longitudinally disposed reference path is substantially contiguous with the guideway centerline.

27. A vehicle as claimed in Claim 14, wherein the longitudinally disposed reference path is substantially parallel to, but laterally offset from the guideway centerline.

28. A vehicle as claimed in Claim 15, wherein the longitudinally disposed reference path is substantially parallel to, but laterally offset from the guideway centerline.

29. A vehicle as claimed in Claim 16, wherein the longitudinally disposed reference path is substantially parallel to, but laterally offset from the guideway centerline.

30. A vehicle as claimed in Claim 14, wherein a secondary running face lies immediately adjacent to, and substantially parallel to, at least one of the primary running faces.

31. A vehicle as claimed in Claim 15, wherein a secondary running face lies immediately adjacent to, and substantially parallel to, at least one of the primary running faces.

32. A vehicle as claimed in Claim 16, wherein a secondary running face lies immediately adjacent to, and substantially parallel to, at least one of the primary running faces.

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33. A vehicle as claimed in Claim 30, wherein the longitudinally disposed reference path is contiguous with the second running face.

34. A vehicle as claimed in Claim 31, wherein the longitudinally disposed reference path is contiguous with the second running face.

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35. A vehicle as claimed in Claim 32, wherein the longitudinally disposed reference path is contiguous with the second running face.

36. A vehicle as claimed in Claim 14, wherein a secondary running face lies immediately adjacent to and substantially parallel to each primary running face and the longitudinally disposed reference path is contiguous with the lateral centerline between the respective two secondary running faces.

37. A vehicle as claimed in Claim 15, wherein a secondary running face lies immediately adjacent to and substantially parallel to each primary running face and the longitudinally disposed reference path is contiguous with the lateral centerline between the respective two secondary running faces.

38. A vehicle as claimed in Claim 16, wherein a secondary running face lies immediately adjacent to and substantially parallel to each primary running face and the longitudinally disposed reference path is contiguous with the lateral centerline between the respective two secondary running faces.

39. A vehicle as claimed in Claim 30, wherein at least one of the wheels also incorporates a flange, adapted to engage with the secondary running face.

40. A vehicle as claimed in Claim 31, wherein at least one of the wheels also incorporates a flange, adapted to engage with the secondary running face.

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41. A vehicle as claimed in Claim 32, wherein at least one of the wheels also incorporates a flange, adapted to engage with the secondary running face.

42. A vehicle as claimed in Claim 33, wherein at least one of the wheels also incorporates a flange, adapted to engage with the secondary running face.

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43. A vehicle as claimed in Claim 34, wherein at least one of the wheels also incorporates a flange, adapted to engage with the secondary running face.

44. A vehicle as claimed in Claim 35, wherein at least one of the wheels also incorporates a flange, adapted to engage with the secondary running face.

45. A vehicle as claimed in Claim 36, wherein at least one of the wheels also incorporates a flange, adapted to engage with the secondary running face.

46. A vehicle as claimed in Claim 37, wherein at least one of the wheels also incorporates a flange, adapted to engage with the secondary running face.

47. A vehicle as claimed in Claim 38, wherein at least one of the wheels also incorporates a flange, adapted to engage with the secondary running face.

48. A vehicle as claimed in Claim 14, wherein the control system calculates a virtual longitudinally disposed reference path which is not necessarily parallel or contiguous with the guideway centerline.
